



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,023	02/17/2004	Toshimi Sakurai	NEC0251US	9597
33031 7590 01/22/2007 CAMPBELL STEPHENSON ASCOLESE, LLP 4807 SPICEWOOD SPRINGS RD. BLDG. 4, SUITE 201 AUSTIN, TX 78759			EXAMINER DANG, KHANH	
			ART UNIT	PAPER NUMBER
			2111	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/22/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/780,023

Applicant(s)

SAKURAI ET AL.

Examiner

Khanh Dang

Art Unit

2111

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Notice to Applicants***

**This application, previously been assigned to and examined by Ex. Justin King, is now assigned to Ex. Dang. Any future contact should be directed to Ex. Khanh Dang whose contact information is provided at the end of this Office Action.**

In response to Examiner King's Non-Final Office Action dated 7/18/2006, no claim has been amended by Applicants. Since it is believed that the previous rejections are still applicable, the previous Non-Final Rejection issued by Ex. King is reproduced below:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claim 15 is rejected under 35 U.S.C. 102(a) as being anticipated by PCI Express™ to PCI/PCI-X Bridge Specification.

Referring to claim 15: The Specification discloses a PCI data bus (figure 1-2, connection between the PCI Express to PCI bridge and PCI device), a first circuit (figure 1-2, a PCI device), a second circuit (figure 1-2, the PCI Express to PCI bridge), wherein the second circuit is configured to transmit data to a PCI-Express bus, and wherein the

Art Unit: 2111

PCI data bus transmits data only between the first and second circuits. Hence, the claim is anticipated by the PCI Express™ to PCI/PCI-X Bridge Specification.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Petty et al. (U.S. Patent No. 6,594,712).

Referring to claims 1, 6, and 15: The admitted prior art discloses an existing PCI practice including a first circuit (figure 3, structure 42) configured to receive first data (data received from structure 40), wherein the first circuit is configured to translate the first data into PCI formatted data and a PCI data bus (figure 3, structure 32). The admitted prior art does not disclose a second circuit coupled to the first circuit via the PCI data bus, wherein the second circuit is configured to receive the PCI formatted data

from the first circuit via the PCI data bus, wherein the second circuit is configured to translate the PCI formatted data received from the first circuit into PCI-Express formatted data; wherein the PCI data bus is configured to transmit data between only the first and second circuits.

Petty discloses a computer system wherein the PCI protocol is adapted onto the Infiniband architecture. Petty teaches one to expand the bandwidth to support more PCI devices with the Infiniband architecture. Petty discloses that PCI devices can be easily adapted onto other bus protocol. Petty discloses a first circuit (figure 2, structure 206) receiving I/O data and a second circuit (figure 2, structure 202) coupled to the first circuit to translate data into Infiniband format. Hence, it would have been obvious to one having ordinary skill in the computer art at the time Applicant made the invention to adapt Petty's teaching onto the admitted prior art because Petty teaches one to support more PCI devices by adapting PCI devices onto a higher bandwidth bus protocol.

Referring to claims 2, 7, 11, and 14: Since the PCI-Express system can accommodate a plurality of PCI-Express devices, a second PCI device with a second interface adapter is the claimed second PCI data bus, third circuit. And fourth circuit.

Referring to claims 3 and 8: Petty's second circuit is a protocol adapter, which connects to a non-PCI bus. Since Petty's adapter connects a PCI device to a non-PCI bus, Petty's adapter's means for translating the different bus protocol is the claimed translator circuit.

Referring to claims 4-5, 9-10, and 12-13: The admitted prior art discloses that it is known to integrate the interface circuit, the core circuit, and the connecting bus in

between on one printed board (figures 3 and 5). Furthermore, the MPEP 2144 has stated that forming in one piece an article, which has formerly been formed in two pieces and put together involves only routine skill in the art.

### ***Response to Arguments***

Applicants' arguments filed 12/04/2006 have been fully considered but they are not persuasive.

At the outset, Applicants are reminded that claims subject to examination will be given their broadest reasonable interpretation consistent with the specification. *In re Morris*, 127 F.3d 1048, 1054-55 (Fed. Cir. 1997). As a matter of fact, the "examiner has the duty of police claim language by giving it the broadest reasonable interpretation." *Springs Window Fashions LP v. Novo Industries, L.P.*, 65 USPQ2d 1862, 1830, (Fed. Cir. 2003). Applicants are also reminded that claimed subject matter not the specification, is the measure of the invention. Disclosure contained in the specification cannot be read into the claims for the purpose of avoiding the prior art. *In re Sporck*, 55 CCPA 743, 386 F.2d, 155 USPQ 687 (1986).

With this in mind, the discussion will focus on how the terms and relationships thereof in the claims are met by the references. Response to any limitations that are not in the claims or any arguments that are irrelevant and/or do not relate to any specific claim language will not be warranted.

**Objection to the Specification:**

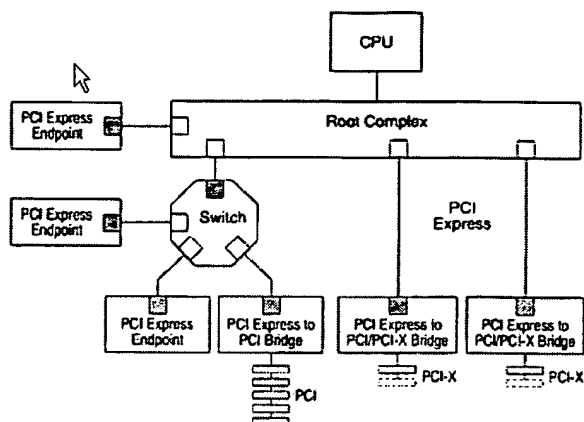
The objection has been overcome by Applicants' amendment.

**The 102 Rejection:**

With regard to claim 15, Applicants argue that:

Claim 15 stands rejected under 35 U.S.C. § 102(a) as being anticipated by Figure 1-2 of the PCI Express™ to PCI/PCI-X Bridge Specification. Claim 15 recites several components formed on a substrate. More particularly, line 15 recites a PCI data bus, a first subcircuit, and a second subcircuit, all formed on the same substrate. Applicants have reviewed Figure 1-2 of PCI Express™ to PCI/PCI-X Bridge Specification and can find no teaching or fair suggestion of a PCI data bus, a first subcircuit, and a second subcircuit all formed on the same substrate, either alone or in combination with the remaining limitations of claim 15. As such, Applicants assert that claim 15 is patentably distinguishable over Figure 1-2 of the PCI Express™ to PCI/PCI-X Bridge Specification.

Contrary to Applicants' argument, the system shown in Fig. 1-2 is reproduced below:



It is clear that at least the CPU the PCIe bus (with root complex and switch), the PCI bus, the PCI slots, the PCI/PCIe bridge and other bridges must be placed on a motherboard or a mainboard. For example, a motherboard of a computer supports placement of the CPU, PCI slots, PCI/PCIe Bridge. The mainboard or motherboard clearly is readable as a substrate.

### **The 103 Rejection:**

With regard to claims 1-15, Applicants argue that "Independent claim 1 recites a first circuit coupled to a second circuit via a PCI data bus. Claim 1 also recites that the PCI data bus is configured to transmit data between only the first and second circuits. In rejecting independent claim 1, the Office Action asserts the admitted prior art does not teach a PCI data bus which is configured to transmit data between only the first and second circuits. However, the Office Action asserts that Pettey discloses this missing limitation. Specifically, the Office Action asserts that Pettey discloses claim 1 's first circuit (Fig. 2, I/O controller 206) coupled to claim 1 's second circuit (Fig. 2, TCA 202).



Fig. 2 of Pettey shows a PCI bus-a 216 coupled between I/O controller 206 and TCA 202. However, as more fully described below, PCI bus-a 216 is not configured to transmit data only between TCA 206 and I/O controller 202 as required by claim 1. Column 7, lines 14-25 of Pettey teaches, "Coupled to one of the PCI buses 216 [sic] is a local CPU 208, for programming the TCA 202 and I/O controllers 206." Also, the cited section of Pettey teaches, "In addition, the local memory 218 may be used to store data from the I/O controllers 206..." Given that CPU 208 is coupled between PCI I/O controller 206 and local memory 218, it follows the PCI bus-a 216 is used for transmitting data between PCI I/O controller 206 and CPU 208 in addition to transmitting data between PCI I/O controller 206 and TCA 202. As such, Applicants assert that claim 1 is patentably distinguishable over the cited sections of Pettey in combination with the cited sections of the admitted prior art."

In response to Applicants' argument, at the outset, it is noted that a review of the 35 USC 103 Rejection does not reveal that "the Office Action asserts the admitted prior art does not teach a PCI data bus which is configured to transmit data between only the first and second circuits. However, the Office Action asserts that Pettey discloses this missing limitation" as alleged by Applicants. In fact, as clearly laid out in the 35 USC 103 Rejection, what is missing from the acknowledged prior art is the use of an interface adapter for adapting a PCI device to a PCI Express environment. Pettey fills the gap by teaching the use of an interface adapter to interface a PCI device into the Infiniband environment which is very similar to the PCI express architecture. Like the PCI express, the Infiniband is a switched fabric communication link to provide point-to-point serial link

between the COU and high speed peripherals. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an interface adapter for PCI devices as taught by Pettey for adapting such PCI devices to another environments such as the PCI express environment. Applicants are reminded that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Applicants are also reminded that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

### ***Relevant Art***

Definition of Infiniband from Wikipedia, and The PCI Express-Infiniband Connection are cited as relevant art.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

#### ***Contact Information***

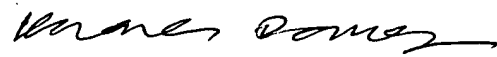
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Dang whose telephone number is 571-272-3626. The examiner can normally be reached on Monday-Friday from 9:AM to 5:PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart, can be reached on 571-272-3632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Art Unit: 2111

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**Khanh Dang**  
**Primary Examiner**